WE CLAIM:

1. A method for monitoring a communication media access schedule of a communication controller in a communication system by means of a bus guardian, the communication system comprising a communication media and nodes connected to the communication media, each node having a communication controller and a bus guardian assigned to the communication controller, wherein messages are transmitted among the nodes across the communication media based on a cyclic time triggered communication media access scheme, the method comprising the steps of:

    a) providing the bus guardian with a priori knowledge about possible deviations from the communication media access schedule during startup of the communication; and
    b) using said a priori knowledge of the bus guardian during startup of the communication to distinguish between an allowed deviation and a forbidden deviation caused by a failure of the communication controller.

2. The method of claim 1, wherein allowed deviations from the communication media access schedule during startup of the communication are represented by reset information (SR) and by a chronological occurrence of the reset information (SR), wherein the bus guardian monitors the reset information (SR) and the chronological occurrence of the reset information (SR) during startup of the communication.

3. The method of claim 2, wherein during startup of the communication, the communication controller of one of the nodes transmits a first trigger signal (ARM) to the bus guardian assigned to that communication controller, the bus guardian defines at least one expectation window according to said a priori information, the bus guardian monitors an occurrence of further trigger signals within the at least one expectation window, and the bus guardian distinguishes between an allowed deviation and a forbidden deviation in dependence on an occurrence of further trigger signals within the at least one expectation window and in dependence on said a priori information.

4. The method of claim 3, wherein said first trigger signal (ARM) is transmitted at a beginning of a timeslot in a cycle of the communication media access scheme and a first expectation window is defined at an end of said timeslot in said cycle.

5. The method of claim 4, wherein a further trigger signal (ARM) within a further expectation window defines a beginning of a new cycle of the communication media access scheme.

6. The method of claim 5, wherein each of a number of further expectation windows is defined at a beginning of subsequent cycles of the communication media access scheme.

7. The method of claim 6, wherein said number of further expectation windows is defined according to said a priori data.

8. The method of claim 7, wherein said number of further expectation windows is defined according to a parameter (ColdStartMax) defining a maximum number of cycles for which the communication controller is allowed to actively try to establish communication with a further communication controller of one of the other nodes of the communication system.

9. The method of claim 3, wherein for an allowed deviation from the communication media access schedule, the expectation windows may or may not contain further trigger signals (ARM).

10. The method of claim 6, wherein for a valid schedule-reset (SR), there are no further trigger signals (ARM) within the further expectation windows.

11. The method of claim 3, wherein for a forbidden deviation from the communication media access schedule, there are no further trigger signals (ARM) outside the expectation windows.

12. A computer program for execution on one of a computer and a microprocessor, wherein the computer program is programmed to execute the method of claim 1.

13. The computer program of claim 12, wherein the computer program is stored in one of a read-only-memory, a random-access-memory, and a flash-memory.

14. A bus guardian assigned to a communication controller of one of a number of nodes connected to a communication media, wherein messages are transmitted among the nodes across the communication media based on a cyclic time triggered communication media access scheme, the one node comprising the communication controller and the bus guardian, the bus guardian comprising:

    means for monitoring the communication media access schedule of the communication controller;
    means for utilizing a priori knowledge about possible deviations from the communication media access schedule during startup of the communication; and
    means for making use of said a priori knowledge to distinguish between an allowed deviation and a forbidden deviation caused by a failure of the communication controller during startup.

15. The bus guardian of claim 14, wherein the bus guardian comprises means for executing the method of claim 2.

16. One of a number of nodes connected to a communication media, wherein messages are

transmitted among the nodes across the communication media based on a cyclic time triggered communication media access scheme, the node comprising:

a communication controller; and

a bus guardian assigned to said communication controller, said bus guardian having means for monitoring the communication media access schedule of said communication controller, wherein said bus guardian has a priori knowledge about possible deviations from the communication media access schedule during startup of the communication and said bus guardian has means for making use of said a priori knowledge in order to distinguish between an allowed deviation and a forbidden deviation caused by a failure of said communication controller during startup.

17. The node of claim 16, wherein said bus guardian comprises means for executing the method of claim 2.

18. A communication system comprising:

a communication media; and

nodes connected to said communication media, wherein messages are transmitted among said nodes across said communication media based on a cyclic time triggered communication media access scheme, each node having a communication controller and a bus guardian assigned to the communication controller, the bus guardian monitoring a communication media access schedule of said communication controller, wherein said bus guardian has a priori knowledge about possible deviations from the communication media access schedule during startup of the communication and said bus guardian has means for making use of said a priori knowledge in order to distinguish between an allowed deviation and a forbidden deviation caused by a failure of said communication controller during startup of the communication.

19. The communication system of claim 18, wherein said a priori knowledge comprises reset information (SR) and a chronological occurrence of said reset information (SR) during startup of the communication, wherein said means for making use of said a priori knowledge monitor said reset information (SR) and said chronological occurrence of said reset information (SR) during startup of the communication in order to distinguish between an allowed deviation and a forbidden deviation caused by a failure of said communication controller.

20. The communication system of claim 18, wherein said bus guardian comprises means for executing the method of claim 2.